

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows.

1. (Currently Amended) A gallium-nitride-based light-emitting apparatus comprising:
  - a substrate;
  - a first-conducting-type clad layer formed on the substrate;
  - an active layer formed on the first-conducting-type clad layer; and
  - a second-conducting-type clad layer formed on the active layer,
 the active layer including barrier layers and well layers made of a gallium-nitride-based compound semiconductor, wherein
  - the barrier layers of the active layer include a first barrier layer formed toward the first-conducting-type clad layer and second barrier layers sandwiched by the well layers,
  - the light-emitting apparatus comprises a second-conducting-type carrier block layer between the active layer and the second-conducting-type clad layer, and
  - the band gap  $E_{gb}$  of the second-conducting-type carrier block layer, the band gap  $E_{g2}$  of the second barrier layers, the band gap  $E_{g1}$  of the first barrier layer, and the band gap  $E_{gc}$  of the clad layers satisfy the relationship  $E_{gb} > E_{g2} > E_{g1} \geq E_{gc}$ .
2. (Currently Amended) A gallium-nitride-based light-emitting apparatus according to claim 1, wherein ~~[[the]]~~a thickness  $d_1$  of the first barrier layer and ~~[[the]]~~a thickness  $d_2$  of each of the second barrier layers satisfy the relationship  $d_1 > d_2$ .
3. (Original) A gallium-nitride-based light-emitting apparatus according to claim 2, wherein the thickness  $d_1$  of the first barrier layer satisfies the relationship  $d_1 \leq 50$  nm.
4. (Currently Amended) A gallium-nitride-based light-emitting apparatus according to claim 1 ~~or 2~~, wherein ~~[[the]]~~a thickness  $d_3$  of each of the well layers satisfies ~~that~~ the relationship  $d_3 \leq 4$  nm.

5. (Currently Amended) A gallium-nitride-based light-emitting apparatus according to ~~any one~~ of claim[[s]] 1 to 4, wherein the first barrier layer and the second barrier layers comprise  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$  ( $0 \leq x \leq 0.3$  and  $0 \leq y \leq 0.05$ ), and wherein the well layers comprise  $\text{Al}_a\text{In}_b\text{Ga}_{1-a-b}\text{N}$  ( $0 \leq a \leq 0.01$  and  $0 \leq b \leq 0.1$ ).
6. (Currently Amended) A gallium-nitride-based light-emitting apparatus according to ~~any one~~ of claim[[s]] 1 to 5, wherein the second-conducting-type carrier block layer comprises  $\text{Al}_p\text{In}_q\text{Ga}_{1-p-q}\text{N}$  ( $0 \leq p \leq 0.5$  and  $0 \leq q \leq 0.1$ ).
7. (Currently Amended) A gallium-nitride-based light-emitting apparatus according to ~~any one~~ of claim[[s]] 1 to 6, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0 \leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).
8. (New) A gallium-nitride-based light-emitting apparatus according to claim 2, wherein a thickness  $d_3$  of each of the well layers satisfies the relationship  $d_3 \leq 4$  nm.
9. (New) A gallium-nitride-based light-emitting apparatus according to claim 2, wherein the first barrier layer and the second barrier layers comprise  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$  ( $0 \leq x \leq 0.3$  and  $0 \leq y \leq 0.05$ ), and wherein the well layers comprise  $\text{Al}_a\text{In}_b\text{Ga}_{1-a-b}\text{N}$  ( $0 \leq a \leq 0.01$  and  $0 \leq b \leq 0.1$ ).
10. (New) A gallium-nitride-based light-emitting apparatus according to claim 3, wherein the first barrier layer and the second barrier layers comprise  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$  ( $0 \leq x \leq 0.3$  and  $0 \leq y \leq 0.05$ ), and wherein the well layers comprise  $\text{Al}_a\text{In}_b\text{Ga}_{1-a-b}\text{N}$  ( $0 \leq a \leq 0.01$  and  $0 \leq b \leq 0.1$ ).
11. (New) A gallium-nitride-based light-emitting apparatus according to claim 4, wherein the first barrier layer and the second barrier layers comprise  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$  ( $0 \leq x \leq 0.3$  and  $0 \leq y \leq 0.05$ ), and wherein the well layers comprise  $\text{Al}_a\text{In}_b\text{Ga}_{1-a-b}\text{N}$  ( $0 \leq a \leq 0.01$  and  $0 \leq b \leq 0.1$ ).

12. (New) A gallium-nitride-based light-emitting apparatus according to claim 2, wherein the second-conducting-type carrier block layer comprises  $\text{Al}_p\text{In}_q\text{Ga}_{1-p-q}\text{N}$  ( $0 \leq p \leq 0.5$  and  $0 \leq q \leq 0.1$ ).
13. (New) A gallium-nitride-based light-emitting apparatus according to claim 3, wherein the second-conducting-type carrier block layer comprises  $\text{Al}_p\text{In}_q\text{Ga}_{1-p-q}\text{N}$  ( $0 \leq p \leq 0.5$  and  $0 \leq q \leq 0.1$ ).
14. (New) A gallium-nitride-based light-emitting apparatus according to claim 4, wherein the second-conducting-type carrier block layer comprises  $\text{Al}_p\text{In}_q\text{Ga}_{1-p-q}\text{N}$  ( $0 \leq p \leq 0.5$  and  $0 \leq q \leq 0.1$ ).
15. (New) A gallium-nitride-based light-emitting apparatus according to claim 5, wherein the second-conducting-type carrier block layer comprises  $\text{Al}_p\text{In}_q\text{Ga}_{1-p-q}\text{N}$  ( $0 \leq p \leq 0.5$  and  $0 \leq q \leq 0.1$ ).
16. (New) A gallium-nitride-based light-emitting apparatus according to claim 2, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0 \leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).
17. (New) A gallium-nitride-based light-emitting apparatus according to claim 3, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0 \leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).
18. (New) A gallium-nitride-based light-emitting apparatus according to claim 4, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0 \leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).
19. (New) A gallium-nitride-based light-emitting apparatus according to claim 5, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0$

$\leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).

20. (New) A gallium-nitride-based light-emitting apparatus according to claim 6, wherein the clad layers comprise a super-lattice structure formed by stacking layers of  $\text{Al}_\alpha\text{In}_\gamma\text{Ga}_{1-\alpha-\gamma}\text{N}$  ( $0 \leq \alpha \leq 0.2$  and  $0 \leq \gamma \leq 0.1$ ) and layers of  $\text{Al}_\beta\text{In}_\eta\text{Ga}_{1-\beta-\eta}\text{N}$  ( $0 \leq \beta \leq 0.05$  and  $0 \leq \eta \leq 0.1$ ).